

WHAT IS CLAIMED IS:

1 ~~Sub A1~~ 1. A method for providing bandwidth to access response  
2 messages, comprising the steps of:  
3 analyzing an access response message situation;  
4 determining whether said access response message  
5 situation meets a predetermined criterion; and  
6 if so,  
7 diverting at least one paging message.

1 2. The method according to Claim 1, wherein said step  
2 of analyzing an access response message situation comprises  
3 the step of determining a number of access response messages  
4 that are awaiting transmission.

1 ~~Sub A2~~ 3. The method according to Claim 2, wherein said step  
2 of determining whether said access response message situation  
3 meets a predetermined criterion comprises the step of  
4 determining whether said number exceeds a predetermined  
5 threshold.

1        <sup>3</sup>~~4~~.        The method according to Claim <sup>2</sup>~~2~~, wherein said  
2        predetermined threshold comprises five.

1            5.        The method according to Claim 1, wherein said step  
2        of analyzing an access response message situation comprises  
3        the step of determining an age of an oldest access response  
4        message that is awaiting transmission.

1            6.        The method according to Claim 5, wherein said step  
2        of determining whether said access response message situation  
3        meets a predetermined criterion comprises the step of  
4        determining whether said age exceeds a predetermined period  
5        of time.

1            7.        The method according to Claim 6, wherein said  
2        predetermined period of time comprises 1.28 seconds.

1 <sup>Sub</sup>  
2 <sup>A3</sup> 8. The method according to Claim 1, wherein said step  
3 of analyzing an access response message situation comprises  
4 the steps of determining a number of access response messages  
5 that are awaiting transmission and determining an age of an  
oldest access response message that is awaiting transmission.

1 <sup>5.</sup>  
2 <sup>9.</sup> The method according to Claim 1, wherein said step  
3 of diverting at least one paging message comprises the step  
of deleting said at least one paging message.

1 <sup>6.</sup>  
2 <sup>10.</sup> The method according to Claim 1, wherein said step  
3 of diverting at least one paging message comprises the step  
of delaying said at least one paging message.

1 <sup>7.</sup>  
2 <sup>11.</sup> The method according to Claim <sup>6</sup>~~10~~, wherein said step  
3 of delaying said at least one paging message comprises the  
4 step of delaying said at least one paging message until said  
5 access response message situation no longer meets said  
6 predetermined criterion or a predetermined period of time  
elapses.

1       <sup>8.</sup>  
      ~~12.~~ The method according to Claim 1, wherein said step  
2 of diverting at least one paging message comprises the step  
3 of diverting a plurality of paging messages according to  
4 respective priority levels of said plurality of paging  
5 messages.

1       <sup>9.</sup>  
      ~~13.~~ The method according to Claim <sup>8</sup>~~12~~, further  
2 comprising the steps of:  
3               repeating said steps of analyzing and determining;  
4       and  
5               diverting additional paging messages of said  
6 plurality of paging messages, said additional paging messages  
7 associated with a higher priority level.

1 <sup>sub</sup> 15 16. The base station according to Claim 15, wherein  
2 said at least one logic module is further configured to  
3 determine whether said number exceeds a predetermined  
4 threshold when determining whether said access response  
5 message situation meets said predetermined criterion.

1 <sup>12</sup> 17. The base station according to Claim <sup>11</sup> 16, wherein  
2 said predetermined threshold comprises five.

1 18. The base station according to Claim 14, wherein  
2 said at least one logic module is further configured to  
3 determine an age of an oldest access response message that  
4 is awaiting transmission when analyzing said access response  
5 message situation.

1 19. The base station according to Claim 18, wherein  
2 said at least one logic module is further configured to  
3 determine whether said age exceeds a predetermined period of  
4 time when determining whether said access response message  
5 situation meets said predetermined criterion.

1           20. The base station according to Claim 19, wherein  
2       said predetermined period of time comprises 1.28 seconds.

1       <sup>Sub A6</sup> 21. The base station according to Claim 14, wherein  
2       said at least one logic module is further configured to  
3       determine a number of access response messages that are  
4       awaiting transmission and determine an age of an oldest  
5       access response message that is awaiting transmission when  
6       analyzing said access response message situation.

1       <sup>14</sup> 22. The base station according to Claim <sup>10</sup> 14, wherein  
2       said at least one logic module is further configured to  
3       delete said at least one paging message when diverting said  
4       at least one paging message.

1       <sup>15</sup> 23. The base station according to Claim <sup>10</sup> 14, wherein  
2       said at least one logic module is further configured to delay  
3       said at least one paging message by storing said at least one  
4       paging message in said memory when diverting said at least  
5       one paging message.

14.  
1 ~~24~~. The base station according to Claim <sup>15</sup>~~23~~, wherein  
2 said at least one logic module is further configured to delay  
3 said at least one paging message until said access response  
4 message situation no longer meets said predetermined  
5 criterion or a predetermined period of time elapses when  
6 delaying said at least one paging message.

17.  
1 ~~25~~. The base station according to Claim <sup>10</sup>~~14~~, wherein  
2 said at least one logic module is further configured to  
3 divert a plurality of paging messages according to respective  
4 priority levels of said plurality of paging messages when  
5 diverting said at least one paging message.

17.  
1 ~~26~~. The base station according to Claim <sup>17</sup>~~25~~, wherein  
2 said at least one logic module is further configured to:  
3 repeat the analysis and the determination; and  
4 divert additional paging messages of said plurality  
5 of paging messages, said additional paging messages  
6 associated with a higher priority level.

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1 27. A method for ensuring that lower priority messages  
2 are provided a minimum bandwidth in a wireless communications  
3 system, comprising the steps of:  
4 providing lower priority messages and higher  
5 priority messages that share a given bandwidth;  
6 transmitting higher priority messages;  
7 determining whether a backlog of lower priority  
8 messages exists;  
9 diverting at least one higher priority message  
10 responsive to an affirmative determination that said backlog  
11 of lower priority messages exists;  
12 transmitting lower priority messages using  
13 bandwidth freed from said step of diverting.

1 <sup>20</sup>~~28~~. The method according to Claim <sup>19</sup>~~27~~, wherein said  
2 lower priority messages comprise access response messages and  
3 said higher priority messages comprise paging messages.



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1 29. The method according to Claim 27, wherein said step  
2 of determining whether a backlog of lower priority messages  
3 exists comprises at least one of the following steps:  
4 comparing a number of backlogged lower priority  
5 messages to a predetermined overload number; and  
6 comparing an age of an oldest backlogged lower  
7 priority message to a predetermined overload age.

19  
1 ~~29~~ 30. The method according to Claim ~~27~~<sup>19</sup>, wherein said step  
2 of diverting at least one higher priority message responsive  
3 to an affirmative determination that said backlog of lower  
4 priority messages exists comprises the step of diverting a  
5 plurality of higher priority messages in an order determined  
6 according to a selected priority ranking.

19  
1 ~~23~~ 31. The method according to Claim ~~27~~<sup>19</sup>, wherein said step  
2 of transmitting lower priority messages using bandwidth freed  
3 from said step of diverting comprises the step of  
4 transmitting a higher priority subset of said lower priority  
5 messages before transmitting a lower priority subset of said  
6 lower priority messages.

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1 14. A base station enabled to provide capacity to  
2 access response messages, comprising:  
3 a transceiver;  
4 a processor;  
5 a memory; and  
6 at least one logic module operatively associated  
7 with said transceiver and interrelated to at least one of  
8 said processor and said memory, said at least one logic  
9 module configured to:  
10 analyze an access response message situation;  
11 determine whether said access response  
12 message situation meets a predetermined criterion; and  
13 if so,  
14 divert at least one paging message.

1 15. The base station according to Claim 14, wherein  
2 said at least one logic module is further configured to  
3 determine a number of access response messages that are  
4 awaiting transmission when analyzing said access response  
5 message situation.

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1 32. A method for temporarily prioritizing access  
2 response messages over paging messages, comprising the steps  
3 of:  
4 detecting whether a control channel is overloaded  
5 by ascertaining a status of an access response channel;  
6 regulating said control channel by reducing the  
7 bandwidth of said control channel that is consumed by a  
8 paging channel; and  
9 transmitting at least one access response message  
10 on said access response channel.

Add  
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